



FABRICATION OF ONE-PIECE HOLLOW-BULB INTERIM OBTURATOR AFTER MAXILLARY RESECTION-A CASE REPORT

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ABSTRACT

The presence of oral cancer can necessitate the surgical removal of all or part of the maxilla, leaving the patient with a defect compromising the oral cavity's integrity and function. Upon removal of surgical obturator after 7-10 days of surgery requires fabrication of interim obturator. Which intern helps in restoration of esthetics, deglutition, and speech till the time patient is ready for definitive prosthesis. This article describes a simple technique to fabricate a one piece hollow bulb interim obturator.

KEYWORDS : Interim obturator, radiation, fabrication procedure.

The use of artificial substitutes to replace anatomic structures has long been an accepted method of treatment for patients with maxillary defects. Treatment of patients with acquired maxillary defects differs from that of patients with congenital defects because of the abrupt alteration in the physiologic processes with which the maxillae are involved⁰⁴. Oral rehabilitation after hemimaxillectomy presents diverse clinical and technical problems¹⁰. After maxillectomy has been performed, prosthetic therapy passes through the three distinct phases of surgical, interim, and definitive obturation. The transition from surgical to interim obturation provides a significant challenge¹¹. Upon removal of the immediate surgical prosthesis and the dressing, usually at 7 to 10 days after the operation a removable interim obturator is constructed and placed for the duration of the wound healing period^{04,10}. The construction of the interim obturator, usually is a source of pain and discomfort, during a period already very stressful for the patient. During this phase clinician must have to cope with the patient's difficulties, along with technical problems, such as mobile, non-cicatrized, bleeding tissues, with mucous secretions, and with jaw and mouth movements restricted by pain and swelling.¹⁰ **This article describes a technique for fabrication of a one-piece hollow-bulb interim obturator for maxillary resection.**

CLINICAL REPORT

A 68 year-old male patient was referred to the OPD of the Department of Prosthodontics Government Dental College Shimla, Himachal Pradesh from the radio therapy department. Patient had a squamous cell carcinoma of the right side of the hard palate and had under gone surgical resection. Patient had been given a surgical obturator which was sutured after surgery. As the patients treatment plan included radio-therapy which is to be stated 3 weeks after surgery. So, fabrication of interim one piece hollow obturator was planned to facilitate early healing and helping the patient during the speech, swallowing and deglutition etc.

TECHNIQUE

1. Examination of oral condition was thoroughly done. A maxillary stock tray was selected, which was modified by trimming the right buccal flange and palatal raised portion of tray on right side was flattened for facilitating the impression of the defect.
2. Impression of maxillary arch was made using irreversible hydrocolloid (Figure 2).
3. Impression was poured in Type III gypsum material to obtain a working cast. On the cast double spacer was adapted over the dentulous area and left half of the hard palate. A custom tray was fabricated on it using light cured polymerizing resin. Stoppers were also placed, one on the hard palate and other two on the occlusal surface (Figure 3).

4. Border moulding was done along the borders using a low fusing impression compound and the impression of the defect was made by using admixed technique (Figure 4).
5. After that the spacer was removed and indentations were marked on impression of the defect and holes drilled onto the tray using a metal bur. Tray adhesive was applied on the tissue surface.
6. On this tray impression was made using medium body addition polysilicon (Figure 6).
7. A cast is poured in Type III gypsum material to obtain a working cast (Figure 7).
8. On this cast deep undercuts were are blocked out with dental plaster to prevent any soft tissue impingement and bleeding at the surgical site. Retentive C-clasps are made with 21-gauge wire around the teeth present.
9. After applying separating medium to the cast a thin layer of autopolymerizing acrylic is placed over the entire palate and the surgical defect in dough stage, removing excess of material from margins with a sharp scalpel.
10. A thick mix of pumice is placed over the set acrylic plate in the defect region to slightly underfill the defect to the level of unresected palate. Excess moisture is absorbed from the pumice using blotting paper.
11. Another layer of autopolymerizing resin is then placed over the mix of pumice and the margins are merged with the rest of the acrylic plate.
12. As the acrylic sets, obturator is retrieved from the cast. 2-3 hole are drilled on the palatal side of the defect area of the obturator. Using these holes water is inject to flush pumice from the plate completely to make it hollow. Later the holes were sealed using autopolymerizig resin.
13. The obturator is then trimmed and polished was inserted intra orally (Figure 9). Minor adjustments were made 24 hours after obturator insertion.

DISCUSSION

Effective obturation of maxillary defects produces sufficient separation of the oral and nasal cavity to greatly improve the quality and intelligibility of speech and it enhances mastication and deglutition. Because the weight of a maxillary obturator prosthesis is often a factor in retention, it is desirable to design the obturator in the form of a hollow extension⁰³. This hollow interim obturator, will provide psychological, physiologic, and hygienic support for the patient. Full extension of a postoperative obturator prosthesis is not advisable because of potential interference with healing, a limited oral opening, and the weight of the prosthesis. Ideal speech and swallowing may not be possible at the time, but the prosthesis is sufficiently extended to provide enough contact with surrounding

tissues to allow acceptable speech and swallowing⁰⁴.

CONCLUSION

Different materials like Silicone rubber, visible-light cured resin and heat cure resin have been used to fabricate the obturators but in this technique autopolymerizing resin was used, as the prosthesis was required within no time so that the healing and preservation of the tissue could be done better. As the patient was scheduled for radiotherapy it was necessary to preserve what so ever is left so that it could be used in future⁰².



Fig 1. Intraoral view

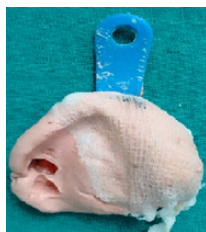


Fig 2. Primary impression



Fig 3. Primary cast



Fig 4. Custom fabricated tray



Fig 5. Impression after border moulding

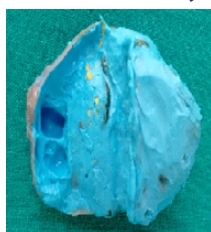


Fig 6. Final impression

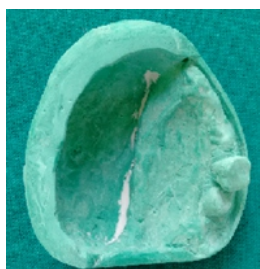


Fig 7. Master cast



Fig 8. One-piece interim obturator

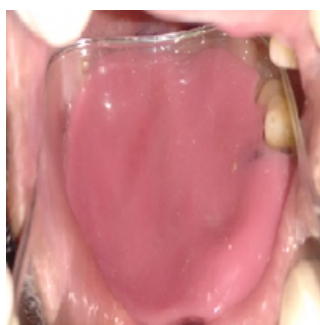


Fig 9. Intraoral view of prosthesis

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